

GROUP DEVELOPMENT ACROSS TIME Reality or Illusion?

SUSAN A. WHEELAN

GDQ Associates, Inc.

BARBARA DAVIDSON

National Board of Medical Examiners

FELICE TILIN

Group Works Consulting

The purpose of this research was to investigate the relationship between the length of time that work groups had been meeting and the verbal behavior patterns and perceptions of group members about their groups. The verbal behavior patterns and perceptions of 180 members of 26 work groups were examined. Perceptions of 639 people in 88 work groups also were explored. Significant relationships and differences were noted between the length of time that work groups had been meeting and the verbal behavior patterns and perceptions of group members. Specifically, members of groups that had been meeting longer made significantly less dependency and fight statements and significantly more work statements. They also perceived their groups to be functioning at higher stages of group development. The results of this study lent further support to traditional models of group development. Verbal behavior patterns of members vary significantly in groups of different durations. Member perceptions of their group's development also vary significantly in groups of different durations.

Keywords: group development; work teams; group stage theory; group life cycle

The concept of group development is well documented in the literature (e.g., Bennis & Shepard, 1956; Mann, 1966; Schutz, 1966; Wheelan, 1994a). Literature that does not support the existence of developmental patterns in groups is rare (Cissna, 1984; Kuypers, Davies, & Glaser, 1986; Yalom, 1975). In view of the general consensus that groups develop across time, extensive reviews of the lit-

SMALL GROUP RESEARCH, Vol. 34 No. 2, April 2003 223-245

DOI: 10.1177/1046496403251608

© 2003 Sage Publications

erature have been conducted to consolidate previous work and to propose a unified model of group development (e.g., Tuckman, 1965; Tuckman & Jensen, 1977; Wheelan, 1990; Wheelan, 1994a). These reviews have produced similar results. What follows is a brief description of the Integrated Model of Group Development outlined by Wheelan (1990, 1994a). The validity of this model has been investigated in a number of studies (Verdi & Wheelan, 1992; Wheelan & Abraham, 1993; Wheelan & Krasick, 1993; Wheelan & McKeage, 1993).

The first stage of group development (dependency and inclusion) is characterized by significant member dependency on the designated leader, concerns about safety, and inclusion issues. In this stage, members rely on the leader and powerful group members to provide direction. Team members may engage in what has been called "pseudo-work," such as exchanging stories about outside activities or other topics that are not relevant to group goals.

The second stage of group development is referred to as a period of counterdependency and fight. At this stage, members disagree among themselves about group goals and procedures. Conflict is an inevitable part of this process. The group's task at Stage 2 is to develop a unified set of goals, values, and operational procedures, and this task inevitably generates some conflict. Conflict also is necessary for the establishment of trust and a climate in which members feel free to disagree with each other.

If the group manages to work through the inevitable conflicts of Stage 2, member trust, commitment to the group, and willingness to cooperate increase. Communication becomes more open and task-oriented. This third stage of group development, referred to as the trust and structure stage, is characterized by more mature negotiations about roles, organization, and procedures. It is also a time in which members work to solidify positive working relationships with each other.

As its name implies, the fourth, or work, stage of group development is a time of intense team productivity and effectiveness. Having resolved many of the issues of the previous stages, the group can focus most of its energy on goal achievement and task accomplishment.

Groups that have a distinct ending point experience a fifth stage. Impending termination may cause disruption and conflict in some groups. In other groups, separation issues are addressed, and members' appreciation of each other and the group experience may be expressed.

Given the preponderance of literature supporting the existence of stages in group development, the research focus has shifted to the identification of developmental differences or similarities among groups with different tasks or group compositions (e.g., Cissna, 1984; Wheelan, 1996). In addition, the relationship between the level of development attained by work groups and the effectiveness and productivity of those groups has been explored (Wheelan & Lisk, 2000; Wheelan, Murphy, Tsumura, & Fried-Kline, 1998; Wheelan & Tilin, 1999).

Although most of the available studies support the concept of group development, there have been criticisms regarding the kinds and quality of research that has been conducted (Shaw, 1981; Steiner, 1986; Sundstrom, DeMeuse, & Futrell, 1990). Reliance on laboratory and impressionistic studies, small sample sizes, and a lack of theoretical integration of research results have led these researchers to conclude that developmental processes in natural groups remain poorly understood. However, despite some challenges to the idea that groups develop across time, the concept remains so ingrained in the culture that workplace supervisors, managers, and team leaders routinely are taught to consider the phases of group development in their interactions with workplace teams (Wheelan, 1999).

One challenge, however, has posed a significant threat to the dominant view that groups develop across time. In 1988, Gersick published a qualitative study of eight naturally occurring teams working on short-term projects. Her results did not support the established view of group development. Instead, Gersick (1988) proposed a model of "punctuated equilibrium" in which the teams experience a period of time during which little progress is made. This is followed by a transition halfway through the life of the project to a phase in which the work goals and objectives of the project teams are accomplished.

Although Gersick (1988) viewed this pattern as different from traditional group development models, she did acknowledge that the design of her study may have affected the developmental process. Team members may have been influenced by the imposed time constraints on the projects, which might have altered the natural process of group development.

Although Gersick's (1988) study is subject to some of the same criticisms leveled at other group research (e.g., small sample size, qualitative analysis, open-ended observation vs. systematic observation), the study's impact has been significant. This single study has led many to question the validity of the traditional view of group development across time.

The need for further research into the traditional models has been called for in the past and the response to the Gersick study serves to highlight that need. Before we discount what has been a reasonably fruitful line of thought and research, another look seems prudent.

What is needed is research that takes into account past criticisms by investigating this question using a larger sample of naturally occurring groups, reliable and valid systematic observation procedures and instruments, and work groups that have met together for varying lengths of time. This study will attempt to meet all these requirements.

Specifically, this research asked the following questions:

1. What is the relationship between the length of time that a group has been meeting and the verbal behavior patterns of its members?
2. Are there significant differences in the verbal behavior patterns of members who perceive their groups to be in different stages of group development?
3. What is the relationship between the length of time that a group has been meeting and member perceptions of group development?
4. Are there significant differences between the length of time that groups have been meeting and member perceptions of group development?

METHOD

THE PARTICIPATING GROUPS

Two sets of groups participated in this field study. The first set (Data Set A) consisted of 26 work groups from 12 different organizations. Twenty-one of the groups (80.8%) were operating in for-profit organizations, including an insurance company, a grocery store chain, a large hotel, a manufacturing company, a utility company, and a pharmaceutical company. Five groups (19.2%) were from nonprofit organizations focusing on social services and education. The groups ranged in size from 4 to 14 members. The average group size was 6.9 members. There were a total of 180 individual participants, of whom 57.2% were male and 42.8% were female. All 26 groups contained a designated leader. Each group was ongoing and had been meeting without significant change in membership between 1 month and 15 months.

Nine groups contained an even distribution of males and females, 6 groups contained more females than males, 7 groups contained more males than females, 3 groups contained females only, and 1 group contained males only. The majority of participants (78.3%) were Caucasian Americans.

Group members ranged from 20 to 65 years of age and older. More than half (54.2%) had college or graduate degrees. The majority (74.4%) of group members were senior managers, managers, or professional employees. Other participants (25.6%) were clerks, administrative assistants, or technical employees.

Data were collected from each of the 26 groups at its work site during a regularly scheduled meeting. Members of the 26 groups, referred to as Data Set A, agreed to have one meeting audiotaped and to complete a questionnaire. Each meeting was approximately 45 minutes in length. The entire meeting of each group was taped, transcribed, and coded using the Group Development Observation System (Wheelan, Verdi, & McKeage, 1994). At the conclusion of each meeting, members completed the Group Development Questionnaire (GDQ) (Wheelan & Hochberger, 1996).

TABLE 1: Distribution of Group Duration in Months

<i>Group Age</i>	<i>Data Set A Number of Groups</i>	<i>Data Set B Number of Groups</i>
1	4	7
2	4	20
3	2	13
4	2	16
5	1	8
6	1	15
7	2	9
8	2	—
9	2	—
10	—	—
11	—	—
12	5	—
15	1	—
Totals	26	88

To address the fourth question, the 26 work groups described previously were used. In addition, 88 work groups (Data Set B) from 36 different organizations were included. Sixty-two of those groups (70.5%) were operating in for-profit organizations, including financial, food, manufacturing, chemical, and pharmaceutical companies. Twenty-six groups (29.5%) were from nonprofit organizations, including social services, health care, and education. The groups ranged in size from 2 to 19 members. The average group size was 7.2 members. There were a total of 639 individual participants, of whom 56.7% were female and 43.3% were males. All 88 groups contained a designated leader. Each group was ongoing and had been meeting without significant change in membership between 1 month and 7 months. Table 1 provides further information about the amount of time that the groups in both data sets had been meeting.

Twenty-four of these groups contained an even distribution of males and females, 30 groups contained significantly more females than males, 21 groups contained significantly more males than females, 9 groups contained females only, and 4 groups contained males only. The majority (81.5%) of the members were Caucasian Americans.

TABLE 2: Demographic Comparison Between Data Sets A and B

	<i>Data Set A</i>	<i>Data Set B</i>
Average group size	6.9	7.2
For-profit organizations	80.8%	70.5%
Professional status	74.6%	79.9%
College/advanced degree	54.2%	56.5%
Caucasian Americans	78.3%	81.5%
Male group members	57.2%	43.3%
Female group members	42.8%	56.7%
All-male groups	3.9%	4.5%
All-female groups	11.6%	10.3%
Majority male groups	26.9%	23.9%
Majority female groups	23.0%	34.1%
Mixed-gender groups	34.6%	27.2%

Group members ranged from 20 years of age to 65 years of age and older. More than half (56.5%) had college or graduate degrees. The majority of group members (79.9%) were senior managers, managers, or professional employees. Other participants were clerks, administrative assistants, or technical employees. Table 2 provides a demographic comparison between the two sets of groups.

Data were collected from each of the 88 groups at its work site during a regularly scheduled meeting. At the conclusion of each meeting, members completed the GDQ (Wheelan & Hochberger, 1996).

THE INSTRUMENTS

The Group Development Observation System

Each of the 26 group meetings was audiotaped. Next, the tapes were transcribed verbatim. Transcripts identified speaker and content. To ensure accuracy, another researcher checked the transcripts. Once the transcription process was accomplished, every complete thought in the transcripts was identified. Complete thoughts are communications or indications that are understood as simple sentences (Bales, 1970). The total number of units across all 26 groups was 31,782.

Raters were trained in the use of the Group Development Observation System (GDOS), which places each complete thought into one of eight categories (Wheelan et al., 1994). The GDOS category system employed, and expanded on, category definitions that were based on the work of Bion (1961) and used in an earlier category system (Stock & Thelen, 1958; Thelen, 1954). The categories represent the types of verbal statements associated with the various stages of group development that have been outlined in the research literature. The eight categories are briefly described next.

Dependency statements (D) are those that show the inclination to conform with the dominant mood of the group, to follow suggestions made by the leader, and, generally, to demonstrate a desire for direction from others.

Counterdependency statements (CD) are those that assert independence from and rejection of leadership, authority, or member attempts to lead.

Fight statements (Fi) are those that convey participation in a struggle to overcome someone or something and imply argumentativeness, criticism, or aggression.

Flight statements (FL) are those that indicate avoidance of task and confrontation.

Pairing statements (P) are those that include expressions of warmth, friendship, support, or intimacy with others. Pairing statements are similar to positive maintenance statements, as outlined by Bales (1950).

Counterpairing statements (CP) are those that indicate an avoidance of intimacy and connection as well as a desire to keep the discussion distant and intellectual.

Work statements (W) are those that represent purposeful, goal-directed activity and task-oriented efforts.

Unscorable statements (US) include unintelligible, inaudible, or fragmentary statements.

What follows are examples of statements that would be classified in a particular category. "I like you" would be classified as pairing. "I'm not interested in friendship" is an example of counterpairing. "I don't know what to do" is a dependent statement. "The leader is incompetent" is a counterdependent statement. "Did you watch the ballgame last night?" is a flight statement. "I don't want to be in the same group with you" is a fight statement. "Let's focus

GDQ Scale	Stage of Group Development
Scale I	Dependency/Inclusion, Stage 1
Scale II	Counterdependency/Fight, Stage 2
Scale III	Trust/Structure, Stage 3
Scale IV	Work and Productivity, Stage 4

Figure 1: Group Development Questionnaire (GDQ) Scales and Their Corresponding Stage of Group Development

on the task at hand” is an example of a work statement (Verdi & Wheelan, 1992).

To insure accurate coding, raters listen and read the transcript simultaneously. Interrater reliability was achieved by giving each transcript to a second coder who independently classified 30% of the statements in that transcript. The percentage of agreement between coders ranged from 85% to 95% in this study, which is consistent with percentages reported in previous studies using this system (e.g., Wheelan & McKeage, 1993; Wheelan & Verdi, 1992).

The Group Development Questionnaire

Based on the integrated model of group development, the 60-item GDQ contains four scales that correspond to the first four stages of group development (see Figure 1). Each scale contains 15 items.

The items on Scale I measure the amount of energy a group is expending in attempting to deal with issues of dependency and inclusion. Test questions were designed to identify the presence or absence of the characteristic behaviors of groups at this first stage of development. Questions on Scale II seek to ascertain the degree of group focus on issues of conflict, counterdependency, and other characteristics associated with the second stage of development. The third scale assesses the degree of trust and structure that is present in the group. Scale III, then, is related to issues associated with the third stage of group development. The characteristics of the fourth developmental stage (work) are assessed by Scale IV. Figure 2 contains sample items from each GDQ scale.

Scale	Sample Questions
GDQ I	<ul style="list-style-type: none"> • Members tend to go along with whatever the leader suggests. • There is very little conflict expressed in the group. • We haven't discussed our goals very much.
GDQ II	<ul style="list-style-type: none"> • People seem to have very different views about how things should be done in this group. • Members challenge the leader's ideas. • There is quite a bit of tension in the group at this time.
GDQ III	<ul style="list-style-type: none"> • The group is spending its time planning how it will get its work done. • We can rely on each other. We work as a team. • The group is able to form subgroups, or subcommittees, to work on specific tasks.
GDQ IV	<ul style="list-style-type: none"> • The group gets, gives, and uses feedback about its effectiveness and productivity. • The group acts on its decisions. • This group encourages high performance and quality work.

Figure 2: Sample Items Contained in Each Group Development Questionnaire (GDQ) Scale

Each item is scored from 1 (*never true of this group*) to 5 (*always true of this group*). Therefore, the minimum score on each scale is 15 and the maximum score is 75. An effectiveness ratio (ER) also is determined by dividing a team's actual mean score on GDQ Scale IV by its potential maximum score (75). The minimum effectiveness ratio, then, is 20% and the maximum is 100%. A group's productivity mean (PM) represents the average response to the question "In your opinion, how productive is this group?" Respondents rate the group from 1 (*not productive at all*) to 4 (*very productive*).

To ensure the reliability and validity of the GDQ, the instrument has been subjected to a number of statistical tests (Wheelan & Hochberger, 1996). Test-retest correlations for each scale ranged from .69 to .89. All correlations were highly significant. The internal consistency of each 15-item scale was investigated using Cronbach's alpha. Coefficients ranged from .54 to .88, and all alpha coefficients were significant. To establish concurrent validity, the GDQ was correlated with the Group Attitude Scale (GAS) (Evans & Jarvis, 1986). The GAS measures member attraction to the group. The results indicated that the concurrent validity of the GDQ and

GAS is in the moderate range, with significant positive correlations between the two measures overall.

Criterion-related validity also was investigated. Work groups that ranked high on organizational measures of productivity had significantly higher scores on GDQ Scales III and IV, the effectiveness ratio, and the productivity mean than groups that ranked low on these external productivity measures. Likewise, groups ranked high on organizational measures of productivity had significantly lower scores on GDQ Scales I and II (Wheelan et al., 1998; Wheelan & Lisk, 2000; Wheelan & Tilin, 1999).

PROCEDURES

All statements made by the 180 members of the 26 groups were unitized and coded using the GDOS categories. Frequency counts were obtained for each coded statement for each individual in each group. These counts were used to calculate percentage of statements by category for each individual. For example, the percentage of dependency statements made by a group member was determined by dividing the total number of dependency statements made by that individual by the total number of statements in any category made by that individual. Group totals and percentages in each category also were calculated.

All 819 members of the 114 groups included in this study completed the GDQ. Productivity scores and scores on each scale of the GDQ were calculated for each individual. Mean group scores also were calculated. Based on these group scores, each group's stage of development was determined as well.

Of the 26 groups that were audiotaped, 12 groups were perceived by their members to be at the third stage of group development. Twelve groups were perceived to be at Stage 4. Two groups were perceived to be at Stage 1 and Stage 2, respectively.

Of the 88 groups in Data Set A, 27 groups were perceived by their members to be functioning at Stage 1. Fourteen groups were perceived to be functioning at Stage 2. Twenty-eight groups were perceived to be functioning at Stage 3, and 19 groups were perceived to be functioning at Stage 4.

DATA ANALYSIS

A number of researchers have described the great difficulties associated with studying groups and the methodological and statistical problems inherent in data analysis and interpretation (e.g., Forsyth, 1998; Keyton, 1994; Lakin, 1979). As a result, some researchers have suggested that studying groups at multiple levels may be most useful (e.g., Hoyle & Crawford, 1994; Moritz & Watson, 1998). Therefore, where appropriate, this study analyzed data at both the individual and the group level. Correlations and analyses of variance were employed to answer the various research questions.

RESULTS

1. WHAT IS THE RELATIONSHIP BETWEEN THE LENGTH OF TIME THAT A GROUP HAS BEEN MEETING AND THE VERBAL BEHAVIOR PATTERNS OF ITS MEMBERS?

Individual-Level Analysis

Pearson product-moment correlation analysis was used to determine the relationship between the length of time that a group had been meeting and the verbal behavior patterns of the 180 members of the 26 groups included in this analysis. The number of months that the group, in which an individual was participating, had been meeting was correlated with the percentage of statements that individual made in each of the GDOS categories.

The results showed that there were significant correlations between the length of time that a group had been meeting and the number of dependency, fight, and work statements that an individual in a group of a particular duration made (see Table 3). Specifically, individuals who made more dependency and fight statements and fewer work statements tended to be in groups that had been meeting for less time.

TABLE 3: Pearson Product-Moment Correlations for Verbal Behaviors of Members and Group Age ($n = 180$)

<i>D</i>	<i>CD</i>	<i>Fi</i>	<i>FL</i>	<i>CP</i>	<i>P</i>	<i>W</i>
-.257**	-.236	-.359*	-.122	-.279	.091	.210**

NOTE: D = dependency statements; CD = counterdependency statements; Fi = Fight statements; FL = flight statements; CP = counterpairing statements; P = pairing statements; W = work statements.

* $p \leq .05$. ** $p \leq .01$.

Group-Level Analysis

Pearson product-moment correlation analysis was used to determine the relationship between the length of time that a group had been meeting and the verbal behavior patterns of the 180 members of the 26 groups included in this analysis. The number of months that the group had been meeting was correlated with the total percentage of statements that members made collectively in each of the GDOS categories.

The results showed that there was a significant correlation between the length of time that a group had been meeting and the total percentage of dependency statements generated by group members (see Table 4). Specifically, groups in which the total percentage of dependency statements was higher had been meeting for less time. Although not significant (.068), the total percentage of fight statements was higher in groups that had met for less time. Also, although not significant (.066), the total percentage of work statements was higher in groups that had met for more time.

2. ARE THERE SIGNIFICANT DIFFERENCES IN THE VERBAL BEHAVIOR PATTERNS OF MEMBERS WHO PERCEIVE THEIR GROUPS TO BE IN DIFFERENT STAGES OF GROUP DEVELOPMENT?

Analysis of variance was used to answer this question. As stated previously, of the 26 groups that were audiotaped, 12 groups were perceived by their members to be at the third stage of group development. Twelve groups were perceived to be at Stage 4. Two groups were perceived to be at Stage 1 and Stage 2, respectively.

For this analysis, the two groups that were perceived by members to be in Stage 1 and Stage 2 were excluded. The percentage of

TABLE 4: Pearson Product-Moment Correlations for Verbal Behaviors of Groups and Group Age ($n = 26$)

<i>D</i>	<i>CD</i>	<i>Fi</i>	<i>FL</i>	<i>CP</i>	<i>P</i>	<i>W</i>
-.428*	-.410	-.500	-.222	-.252	.086	.366

NOTE: D = dependency statements; CD = counterdependency statements; Fi = Fight statements; FL = flight statements; CP = counterpairing statements; P = pairing statements; W = work statements.

* $p \leq .05$.

statements in each GDOS category made by members of the 12 Stage-3 groups was compared with the percentage of statements made by members of the 12 Stage-4 groups.

Members of Stage-3 groups made significantly more counterdependent statements, $F = 4.81$, $df = 1, 52$, $p \leq .03$. The average percentage of counterdependent statements made by members of Stage-3 groups was 3.6% versus 1.7% by members of Stage-4 groups. Members of Stage-3 groups also made significantly more flight statements, $F = 5.56$, $df = 1, 128$, $p \leq .02$. The average percentage of flight statements made by members of Stage-3 groups was 8.6% versus 0.12% by members of Stage-4 groups.

3. WHAT IS THE RELATIONSHIP BETWEEN THE LENGTH OF TIME THAT A GROUP HAS BEEN MEETING AND MEMBER PERCEPTIONS OF GROUP DEVELOPMENT?

Individual-Level Analysis

Pearson product-moment correlations were used to answer this question. The perceptions of the 180 members of the 26 groups that also participated in the GDOS analysis were investigated. The relationship between the length of time groups had been meeting and member perceptions of the development of their group were correlated. The results showed that there were significant correlations between the length of time that a group had been meeting and member perceptions of group development (see Table 5). Members of older groups tended to perceive those groups to have significantly fewer of the characteristics of a Stage-2 group and significantly more of the characteristics of Stage-3 and Stage-4 groups. Mem-

TABLE 5: Pearson Product-Moment Correlations for Member Perceptions of Group Development and Group Age ($n = 180$)

<i>GDQ1</i>	<i>GDQ2</i>	<i>GDQ3</i>	<i>GDQ4</i>	<i>Productivity</i>	<i>Stage</i>
-.040	-.279**	.179*	.161*	.328**	.186*

NOTE: GDQ = Group Development Questionnaire.

* $p \leq .05$. ** $p \leq .01$.

bers of older groups also perceived their groups to be more productive.

Group-Level Analysis

Pearson product-moment correlations also were used to explore this question at the group level. The mean scores on the GDQ scales for each of the 26 groups were correlated with the length of time the groups had been meeting. The results showed that there were significant correlations between the length of time that a group had been meeting and its mean scores on GDQ Scale II and the productivity mean (see Table 6). Older groups were perceived to have significantly fewer of the characteristics of a Stage-2 group and to be more productive.

4. ARE THERE SIGNIFICANT DIFFERENCES BETWEEN THE LENGTH OF TIME THAT GROUPS HAVE BEEN MEETING AND MEMBER PERCEPTIONS OF GROUP DEVELOPMENT?

Individual-Level Analysis

Analysis of variance was used to answer this question. The perceptions of the 172 members of 24 groups that also participated in the GDOS analysis were investigated first. As in a previous analysis, the 2 groups perceived by members to be functioning at the first and second stage of group development were excluded.

A significant difference, $F = 13$, $df = 1, 170$, $p \leq .000$, was noted between the length of time Stage-3 versus Stage-4 groups had been meeting. On average, groups perceived to be in Stage 3 had been meeting for 5.2 months. Groups perceived to be in Stage 4 had been meeting for an average of 8.5 months.

TABLE 6: Pearson Product-Moment Correlations for Group Perceptions of Group Development and Group Age ($n = 26$)

<i>GDQ1</i>	<i>GDQ2</i>	<i>GDQ3</i>	<i>GDQ4</i>	<i>Productivity</i>	<i>Stage</i>
-.001	-.392**	.287	.272	.380*	.144

* $p \leq .05$.**TABLE 7: Average Duration and GDQ Scales of Groups at Different Stages**

<i>Stage</i>	<i>GDQ1</i>	<i>GDQ2</i>	<i>GDQ3</i>	<i>GDQ4</i>	<i>ER</i>	<i>PM</i>	<i>Duration (Months)</i>
1. Mean (<i>SD</i>)	44.5 (5.2)	38.3 (6.6)	52.5 (4.8)	54.1 (3.2)	71.9 (4.3)	2.89 (.49)	2.62 (1.41)
2. Mean (<i>SD</i>)	42.4 (2.8)	49.1 (6.9)	45.3 (5.8)	49.7 (5.8)	65.2 (9.8)	2.57 (.44)	3.71 (1.63)
3. Mean (<i>SD</i>)	40.9 (3.9)	34.4 (4.8)	56.6 (2.1)	59.7 (2.0)	79.6 (2.8)	3.17 (.40)	4.75 (1.81)
4. Mean (<i>SD</i>)	40.2 (4.1)	28.8 (4.1)	60.4 (1.6)	64.6 (2.4)	86.1 (3.1)	3.63 (.39)	4.57 (1.74)

NOTE: GDQ = Group Development Questionnaire; ER = Effectiveness Ratio; PM = Productivity Mean.

Group-Level Analysis

Using the larger set of 88 groups, the same question was posed. The reader will recall that these groups had been meeting for between 1 and 7 months at the time of assessment. Of the 88 groups, 27 groups were perceived by their members to be functioning at Stage 1. Fourteen groups were perceived to be functioning at Stage 2. Twenty-eight groups were perceived to be functioning at Stage 3, and 19 groups were perceived to be functioning at Stage 4.

A significant difference, $F = 8.85$, $df = 3, 84$, $p \leq .000$, was noted in the length of time that groups at different stages had been meeting. Post hoc comparisons revealed that Stage-1 groups had been meeting significantly less time than Stage-3 and Stage-4 groups. The average length of time that groups at the various stages had been meeting is displayed in Table 7.

In theory, during the first stage of group development, one would expect mean scores on GDQ Scale I to be at its highest and mean scores on the other scales to be relatively low. As time passes, mean scores on GDQ Scale II should rise, indicating an increase in conflict among group members and the beginning of Stage 2. Other GDQ mean scores would decrease to reflect the intense focus on conflict. As groups move into the third and fourth stage of group development, mean scores on Stages 1 and 2 should decrease and

mean scores on GDQ Scales III and IV, the effectiveness ratio, and the productivity mean should increase steadily (Wheelan, 1994a, 1994b). The results displayed in Table 7 are consistent with these predictions.

Additional Analyses

Finally, individual and group demographics were investigated to determine whether differences existed among groups within and across data sets. No significant correlations were noted in either data set with regard to group member age, gender, education, or length of service and individual perceptions of group development, as measured by the GDQ. One significant correlation was noted in Data Set A, however. Group size was positively correlated with member responses to GDQ Scale I (.184, $p = .05$) and GDQ Scale II (.267, $p = .05$). Also, group size was negatively correlated with GDQ Scale IV (-.175, $p = .05$) and the productivity mean (-.302, $p = .01$). Individuals in larger groups were more likely to perceive their group as having more of the characteristics associated with the first two stages of group development and fewer of the characteristics associated with the fourth stage of group development. Members of larger groups also perceived their group to be less productive. Group size also was significantly correlated ($r = .648$, $p = .01$) with the GDOS category counterpairing in Data Set A. Members of larger groups were more likely to make counterpairing statements than members of smaller groups.

DISCUSSION

The results of this investigation found significant relationships between the length of time that a group had been meeting and the verbal behavior patterns of its members. As the length of time that a group had been meeting increased, the percentage of dependency and fight statements made by group members decreased and the percentage of work statements increased. Group-level analysis produced similar results. The total percentage of dependency state-

ments made by group members collectively was significantly correlated with group duration. The total percentage of dependency statements that were made in a group was lower in older groups. The total percentage of fight statements also was lower in older groups and the percentage of work statements was higher. The correlations between group age and the total percentage of fight and work approached significance and would have, in all likelihood, been significant with a larger sample size.

In addition, members who perceived their group to be in the third stage of group development made significantly more counterdependent and flight statements than members of groups perceived to be in the fourth stage of group development.

These results suggest that the kinds of statements made by members of groups vary in relation to the length of time that the group has been meeting. In addition, the kinds of statements made by members of older versus younger groups are consistent with theoretical expectations. Group development theories posit that dependency, counterdependency, fight, and flight are associated with the early stages of group development and work is associated with the more mature stages of group development (e.g., Bennis & Shepard, 1956; Tuckman, 1965; Wheelan, 1994a). The results of these analyses support that proposition.

Not only members' verbal behaviors but also member perceptions of their groups are linked to the length of time that groups have been meeting. Members of older groups tended to perceive their groups to have more of the characteristics of Stage-3 and Stage-4 groups. Members also perceived older groups to be more productive. This suggests that group members are capable observers and assessors of developmental processes.

Finally, there were significant differences in both sets of groups with regard to the length of time that groups had been meeting and member perceptions of group development. In Data Set A, the 12 groups perceived by their members to be in the third stage of development had been meeting an average of 5.2 months. Groups perceived by their members to be in the fourth stage of development had been meeting an average of 8.5 months. In the second set of 88 groups, Stage-1 groups had been meeting an average of 2.6 months.

Stage-2 groups had been meeting 3.7 months. Stage-3 and Stage-4 groups had been meeting for more than 4.6 months.

It is unclear why the Stage-4 groups in Data Set A had been meeting, on average, for 8.5 months and the Stage-4 groups in Data Set B had been meeting, on average, for 4.6 months. The lack of demographic differences in the two data sets made interpretation of this finding difficult. One difference in Data Set A was the presence of a significant relationship between group size and perceptions of group development. The reader will recall that as group size increased, members tended to perceive their group as having more characteristics of Stage-1 and Stage-2 groups and fewer characteristics of Stage-4 groups. Also, members of older groups tended to make more counterpairing statements. Group size has been found to inhibit group effectiveness and productivity (e.g., Gist, Locke, & Taylor, 1987; Orpen, 1986; Wheelan & McKeage, 1993). It is possible that group size slowed group development in Data Set A. However, this seems unlikely because there were fewer large groups in Data Set A than in Data Set B. Data Set A contained only 6 groups (23%) with 7 or more members. In contrast, Data Set B contained 33 groups (37.5%) with 7 or more members.

This difference seems more likely to be the result of the groups that participated in this study. It is possible that the Stage-4 groups in Data Set A had been in that stage longer than those in Data Set B. By way of analogy, individuals move through the first three stages of human development (childhood, adolescence, and young adulthood) in about 25 years. Adulthood lasts much longer. The same may be true of groups. To our knowledge, this is the first study to identify a timeframe associated with group development. Therefore, we cannot speak with the same certainty as our human development colleagues. This study suggests some time parameters for the stages of group development. However, more investigations will be necessary to fully explore the relationship between the stage of group development and time.

The findings of this study are consistent with the traditional models of group development and cast doubt on the cyclic models and Gersick's punctuated equilibrium model. The traditional models of group development posit that early in group life, members are

more dependent and counterdependent, engage in more conflict, flight, and less work. Members also are described as more guarded in the early stages. The results of this study supported those propositions in both the behavior of group members and in their perceptions of group processes. Both the verbal behaviors of members and their perceptions of group interaction changed significantly across time.

This was a field study and, although there were attempts to control some variables, group participation in this study was primarily based on the willingness of members to do so. Groups were included if they had been meeting for 15 months or less and if all members agreed to participate. The authors believe that this limited variation in Data Set A. Of the 26 groups that agreed to be audiotaped, 24 were perceived by their members to be functioning at the higher stages of group development. This may be due to the reticence of members in groups functioning at the earlier stages to be observed. What is of interest, however, is that despite this limited range, significant differences were noted in both verbal behavior patterns and member perceptions of their group.

Group research has been criticized for relying too heavily on experimental and laboratory studies. Field research also has its flaws but, in our opinion, the topic must be explored in naturally occurring groups. One way to overcome some of the limitations of field research is to conduct replications of this study and to expand the criteria for inclusion in such studies. For example, the groups in this study were limited to those that had been meeting for 15 months or less. Results cannot be generalized to older groups. Many questions remain as a result.

The next step will be to conduct replications of this study, which focused on younger groups. Then, investigations of the dynamics of older groups will be necessary. Longitudinal studies of groups across extended periods of time, although difficult to accomplish, will be needed as well. Given the results of this investigation, it appears that groups do experience developmental changes during the first 15 months, and those changes are consistent with the changes outlined in traditional models of group development.

Given the results of this study, it seems prudent to consider the traditional models of group development as an important guide for further research. The traditional models, in our opinion, have withstood the test of time and continue to generate significant research findings. In fact, it seems reasonable to take group development into account in all group research. Considering what we know so far, it is likely that group age and level of group development may influence findings in studies of group leadership, group decision making, effective membership, and the like. Decision-making processes, for example, may be different at different stages of group development and may vary across time. Although some theoreticians and researchers of group processes do take group development into account (e.g., Blanchard & Johnson, 1981; Hershey & Blanchard, 1977; Vecchio, 1987), most do not.

It also seems prudent to consider group development in applied settings. For example, convening a new group to undertake a short-term work project may not produce the desired result. Using feedback from members of a Stage-2 group to evaluate the performance of that group's leader may be as unfair as using the assessment of an adolescent to evaluate his or her parents. Until we know more, it seems best to err on the side of caution.

REFERENCES

- Bales, R. F. (1950). *Interaction process analysis: A method for the study of small groups*. Chicago: University of Chicago Press.
- Bales, R. F. (1970). *Personality and interpersonal behavior*. New York: Holt, Rinehart & Winston.
- Bennis, W., & Shepard, H. (1956). A theory of group development. *Human Relations*, 9, 415-437.
- Bion, W. (1961). *Experiences in groups*. New York: Basic Books.
- Blanchard, K., & Johnson, S. (1981). *The one-minute manager*. New York: Berkley.
- Cissna, K. (1984). Phases in group development. *Small Group Behavior*, 15, 3-32.
- Evans, N., & Jarvis, D. (1986). The Group Attitude Scale: A measure of attraction to group. *Small Group Behavior*, 17, 203-216.
- Forsyth, D. R. (Ed.). (1998). Methodological advances in the study of group dynamics [Special issue]. *Group Dynamics: Theory, Research, and Practice*, 2(4), 211-212.
- Gersick, C. J. G. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management Journal*, 31, 9-41.

- Gist, M., Locke, E., & Taylor, M. (1987). Organizational behavior: Group structure, process, and effectiveness. *Journal of Management*, *13*, 237-257.
- Hershey, P., & Blanchard, K. H. (1977). *Management of organizational behavior: Utilizing human resources* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Hoyle, R. H., & Crawford, A. M. (1994). Use of individual-level data to investigate group phenomena: Issues and strategies. *Small Group Research*, *25*, 464-485.
- Keyton, J. (Ed.). (1994). Research problems and methodology [Special issue]. *Small Group Research*, *25*(4), 459-463.
- Kuypers, B., Davies, D., & Glaser, K. (1986). Developmental arrestations in self-analytic groups. *Small Group Behavior*, *17*, 269-302.
- Lakin, M. (Ed.). (1979). What's happened to small group research? [Special issue]. *Journal of Applied Behavioral Science*, *15*(3).
- Mann, R. (1966). The development of member and member-trainer relationships in self-analytic groups. *Human Relations*, *19*, 85-115.
- Moritz, S. E., & Watson, C. B. (1998). Levels of analysis issues in group psychology: Using efficacy as an example of a multilevel model. *Group Dynamics: Theory, Research, and Practice*, *2*, 285-298.
- Orpen, C. (1986). Improving organizations through team development. *Management and Labor Studies*, *11*, 1-12.
- Schutz, W. (1966). *FIRO: A three dimensional theory of interpersonal behavior*. New York: Holt, Rinehart & Winston.
- Shaw, M. E. (1981). *Group dynamics: The psychology of small group behavior* (2nd ed.). New York: McGraw-Hill.
- Steiner, I. D. (1986). Paradigms and groups. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 251-289). Orlando, FL: Academic Press.
- Stock, D., & Thelen, H. (1958). *Emotional dynamics and group culture*. New York: New York University Press.
- Sundstrom, E., DeMeuse, K. P., & Futrell, D. (1990). Work teams: Applications and effectiveness. *American Psychologist*, *45*, 120-133.
- Thelen, H. A. (1954). *Dynamics of groups at work*. Chicago: University of Chicago Press.
- Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological Bulletin*, *63*, 384-399.
- Tuckman, B. W., & Jensen, M. A. C. (1977). Stages in small group development revisited. *Group and Organizational Studies*, *2*, 419-427.
- Vecchio, R. P. (1987). Situational leadership theory: An examination of a prescriptive theory. *Journal of Applied Psychology*, *72*, 444-451.
- Verdi, A. F., & Wheelan, S. (1992). Developmental patterns in same-sex and mixed-sex groups. *Small Group Research*, *23*, 256-278.
- Wheelan, S. A. (1990). *Facilitating training groups: A guide to leadership and verbal intervention skills*. New York: Praeger.
- Wheelan, S. A. (1994a). *Group processes: A developmental perspective*. Boston: Allyn & Bacon.
- Wheelan, S. A. (1994b). *The Group Development Questionnaire: A manual for professionals*. Provincetown, MA: GDQ Associates.
- Wheelan, S. A. (1996). Effects of gender composition and group status differences on member perceptions of group developmental patterns, effectiveness, and productivity. *Sex Roles*, *34*, 665-686.

- Wheelan, S. A. (1999). *Creating effective teams: A guide for members and leaders*. Thousand Oaks, CA: Sage.
- Wheelan, S. A., & Abraham, M. (1993). The concept of intergroup mirroring: Reality or illusion? *Human Relations, 46*, 803-825.
- Wheelan, S. A., & Hochberger, J. (1996). Validation studies of the Group Development Questionnaire. *Small Group Research, 27*, 143-170.
- Wheelan, S. A., & Krasick, C. (1993). The emergence, transmission, and acceptance of themes in a temporary organization. *Group and Organization Management, 18*, 237-260.
- Wheelan, S. A., & Lisk, A. (2000). Cohort group effectiveness and the educational achievement of adult undergraduate students. *Small Group Research, 31*, 724-738.
- Wheelan, S. A., & McKeage, R. (1993). Developmental patterns in small and large groups. *Small Group Research, 24*, 60-83.
- Wheelan, S. A., Murphy, D., Tsumura, E., & Fried-Kline, S. (1998). Member perceptions of internal group dynamics and productivity. *Small Group Research, 29*, 371-393.
- Wheelan, S. A., & Tilin, F. (1999). The relationship between faculty group effectiveness and school productivity. *Small Group Research, 30*, 59-81.
- Wheelan, S. A., & Verdi, A. (1992). Differences in male and female patterns of communication in groups: A methodological artifact? *Sex Roles: A Journal of Research, 27*, 1-15.
- Wheelan, S. A., Verdi, A., & McKeage, R. (1994). *The Group Development Observation System: Origins and applications*. Provincetown, MA: GDQ Associates.
- Yalom, I. (1975). *The theory and practice of group psychotherapy* (2nd ed.). New York: Basic Books.

Susan A. Wheelan is president of GDQ Associates, Inc., past professor of psychological studies in education, and faculty director of the Training and Development Center at Temple University. Her primary research interests include the exploration of group, intergroup, and organizational dynamics.

Barbara Davidson received her doctorate at Temple University. Currently, she is director of Human Resources and Organizational Development at the National Board of Medical Examiners. Her research interest is group development in the workplace.

Felice Tilin received her doctorate at Temple University. She is president of Group Works Consulting and academic director of the Corporate Learning Program at the University of Pennsylvania. Her research interests include group development in the workplace and the relationship between group development and productivity, especially in faculty groups.